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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/514,280	11/02/2004	Roland Aubaur	112740-1018	6798
29177	7590	06/07/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			SAUNDERS JR, JOSEPH	
			ART UNIT	PAPER NUMBER

2194

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/514,280	<b>Applicant(s)</b> AUBAUER ET AL.	
	<b>Examiner</b> Joseph Saunders	<b>Art Unit</b> 2600	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11-2-04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-2-04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This is the initial office action based on the application filed on November 2, 2004. The preliminary amendment also filled on November 2, 2004 canceled claims 1 - 16 and added claims 17 - 34. Claims 17 - 34 are currently pending and considered below.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "16" and "36" of figure 4 have both been used to designate the actuator. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities: Reference to foreign prior art (GB 2360901 A) was made in the specification and must be included on the information disclosure statement.

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: In the specification item "10" is referred to as both a "loudspeaker" (throughout the specification) and as a "loudspeaker with integrated display" (page 9 line 14). This discrepancy creates confusion as to what is meant by item "10". The examiner will interpret item "10" as a "loudspeaker".

Appropriate correction is required.

5. The disclosure is objected to because of the following informalities: In the specification item "12" is referred to as both a "sound surface" (throughout the specification) and as a "display" (page 9 lines 3 and 16, and page 10 line 21). This discrepancy creates confusion as to what is meant by item "12". The examiner will interpret item "12" as a "sound surface".

Appropriate correction is required.

6. The disclosure is objected to because of the following informalities: In the specification there is a typographical error on page 10 line 25 "bound" should be "sound".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. The term "beneath" in claim 22 is a relative term which renders the claim indefinite. The term "beneath" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Since the term "beneath" depends on the orientation of the loudspeaker the examiner will interpret claim 22 as having at least one of at least one actuator and at least one sensor located opposite the side of the displayed surface.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 17 - 21, and 23 - 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Hill (US 2001/0006006 A1).

**Claim 17:** Hill discloses a combination display/loudspeaker apparatus, comprising: a touch-sensitive display (Paragraph 62); and a loudspeaker (Paragraph 61), wherein at least one part of a sound-emitting surface of the loudspeaker forms the display, and wherein the loudspeaker includes at least one recognition part (sensor) for tactile contacts made with the display (Paragraphs 54 and 58).

**Claim 18:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 17, wherein at least one part of the at least one part of the sound-emitting surface of the loudspeaker which forms the display forms the at least one recognition part for tactile contacts made with the display (Paragraphs 54 and 58).

**Claim 19:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 17, wherein the at least one recognition part for tactile contacts made with the display includes at least one of at least one actuator (emitting transducer) and at least one sensor, the at least one sensor being one of an acoustic sensor (transducer) and an optical sensor (Paragraph 54).

**Claim 20:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein the at least one of at least one actuator and at least one sensor is located at an edge of the sound-emitting surface of the loudspeaker (Paragraphs 57 and 103).

**Claim 21:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein the at least one of at least one actuator and at least one sensor is located proximate to an edge (distanced from the edges) of the sound-emitting surface of the loudspeaker (Paragraphs 57 and 103).

**Claim 23:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein the at least one of at least one actuator and at least one sensor is located on the sound-emitting surface of the loudspeaker (Paragraphs 57 and 103).

**Claim 24:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein at least one of a plurality of actuators and a plurality of sensors are located in distributive fashion over an area covered by the sound-emitting surface of the loudspeaker (Paragraphs 57 and 103).

**Claim 25:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein the at least one actuator (transducer) includes at least one of at least one piezo-electric element and one electromagnetic (electrodynamic) converter (Paragraphs 55 and 56).

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**Claim 26:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, wherein the at least one sensor includes at least one of at least one piezo-electric element and one electromagnetic converter (Paragraphs 55 and 56).

**Claim 27:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, further comprising evaluation parts (processor) for evaluating signals delivered by the at least one of at least one actuator and at least one sensor (Paragraph 59).

**Claim 28:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker (Paragraphs 61 and 62), the method comprising: providing that at least one part of a sound-emitting surface of the loudspeaker form the display; and recognizing tactile contacts made with the display via at least one recognition part (Paragraphs 54 and 58).

**Claim 29:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 28, wherein the at least one recognition part recognizes a tactile contact with the display at least one of through a changed decoupling (absorbing) of sound via the sound-emitting surface of the loudspeaker and through at least one of at least one standing wave and reflections which are picked up using at least one sensor, the at least one sensor being one of an acoustic sensor and an optical sensor (Paragraphs 32 - 34).



**Claim 30:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 28, the method further comprising: emitting an audio signal, via the loudspeaker, having a frequency outside an audible frequency range of sound waves; and detecting changes in the audio signal emitted to recognize a tactile contact with the display via the at least one recognition part (Paragraphs 41, 44, 47, and 120).

**Claim 31:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 30, wherein the audio signal is emitted together with audio signals having frequencies in the audible frequency range of sound waves (Paragraph 120).

**Claim 32:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 28, wherein a tactile contact is recognized by a reaction to at least one actuator in the loudspeaker via the at least one recognition part (Paragraph 54).

**Claim 33:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 32, wherein the at least one actuator converts a force acting as a result of the tactile contact with the display into an electrical signal (Paragraph 54).

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**Claim 34:** Hill discloses a method for recognizing tactile contacts with a touch-sensitive display combined with a loudspeaker as claimed in claim 33, wherein a position of a tactile contact on the display is recognized, via the at least one recognition part, by at least one of: evaluating the electrical signal from at least two actuators which detect the tactile contact and compare them with one another; an impedance measurement; a differential level measurement using a level of at least two signals from at least one of different sensors and different actuators; an attenuation measurement of sound waves emitted by the sound-emitting surface; and evaluating at least one of multiple-path propagations and reflections of waves propagating on the sound-emitting surface (Paragraphs 16 - 19, and 54).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Hill (US 2001/0006006 A1).

**Claim 22:** Hill discloses a combination display/loudspeaker apparatus as claimed in claim 19, but does not disclose wherein the at least one of at least one actuator and at least one sensor is located beneath the sound-emitting surface of the loudspeaker. Hill does not explicitly state which side of the sound-emitting surface the at least one of at least one actuator and at least one sensor is located but does mention that their placement is subject to the specific topology of the application (Paragraph 57). Hill also mentions that the liquid crystal display may be used as the sound emitting-surface and contact sensitive area (Paragraph 62). In this application it would be obvious to one of ordinary skill in the art at the time of the invention to place the at least one of at least one actuator and at least one sensor "beneath" or opposite the side of the displayed surface as to not obstruct the viewing of the display.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on (571) 270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JS

5-12-06



James W. Myhre  
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